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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/621,571	07/21/2000	Rajesh Bordawekar	13675(YOR9-2000-0365US1	4994

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EXAMINER

STEELMAN, MARY J

ART UNIT	PAPER NUMBER
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2122

DATE MAILED: 08/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/621,571

Applicant(s)

BORDAWEKAR ET AL.

Examiner

Mary J. Steelman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 31-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is in response to Amendment filed 06/11/2003.
2. As per Applicant's request the Specification has been amended. Claims 1-30 have been canceled. New claims 31-34 have been added. Claims 31-34 are pending.

Drawings

3. In view of the amended Specification, the objection to the drawings is hereby withdrawn.

Specification

4. The use of the trademark JAVA / JAVA Virtual Machine has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 112

5. In view of canceling claims 1-30, the 35 USC 112 rejection is hereby withdrawn.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 31, 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,078,744 to Wolczko et al., in view of US Patent 6,367,012 to Atkinson et al.

Wolczko disclosed reuse of saved compilation data that has been journaled. At col. 7, lines 18-22, Wolczko stated, "The record also distinguishes when the compilation unit has changed between the initial and subsequent compilations...many techniques exist for determining equivalence of the compilation unit." Col. 7, lines 43-53, "The 'compilation unit identification' field contains a value that identifies the compilation unit for the journal record...this value contains verification information used to verify that the compilation unit has not changed between an initial compilation and a subsequent compilation...verification information can be the source code of compilation unit, the checksum of the source code of the compilation unit of similar information." Col. 9, lines 57-60, "...the adaptive compiler is assured that the source program initially compiled is the same as the source program that is optimized." Col. 10, lines 41-66, "As each compilation unit is processed an 'equivalent unit in journal decision procedure determines whether the compilation unit in the source program...is equivalent to the compilation unit processed by the 'initial phase compilation' process (by using the verification data stored in the 'information' field)...If the...decision procedure determines that the compilation units are not equivalent or that no information for the compilation unit has been journaled, the 'subsequent phase compilation' process continues to 'generate intermediate compilation data' procedure...However, if the...decision procedure determines that the completion units are equivalent...the 'subsequent phase compilation' process continues to 'read ICD data from journal procedure...instead of computing the ICD.'" (See Figure 6.)

Wolczko failed to give specifics regarding how the equivalence is determined. However, Atkinson provided more detail on a certification or signature, incorporated in a program, file or code to assure authenticity and integrity, particularly for receiving over a network. (See Figure 3

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and col. 6, lines 19-25) Col. 6, lines 30-33, “Code signing method assures the recipient of the identity of the source of file (i.e., its authenticity) and that the file was not modified after it was transmitted by that source (i.e., the integrity of file). Atkinson disclosed hashing (col. 6, lines 40-50), “...a cryptographic digest of “hash” of executable file is obtained or computed. Standard hash functions are available...These functions take a...string and convert it to a fixed length output string...(called a cryptographic digest). This... “fingerprints” the file by producing a value that indicates whether a file submitted for download matches the original file. Hashing functions and the values they generate are secure...” See Figure 4 and col. 6, line 66 – col. 7, line 8, “...publisher digital certificate and publisher signature are attached or appended to or incorporated to executable file. Publisher signature and publisher digital certificate together form a keyed source confirmation with a secure representation...”

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to have modified Wolczko’s invention that verifies that subsequent compilations have not changed, by specifying techniques such as those disclosed by Atkinson using secure hashing, digitally signing, and attaching a publisher signature and publisher digital certificate as methods to assure authenticity and integrity because these are well known, secure ways to determine equivalency of files, an important feature for allowing code generated by the processes to be exchanged between machines.

8. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,078,744 to Wolczko et al., in view of US Patent 6,317,872 to Gee et al.

Wolczko disclosed using statically compiled code in a virtual machine. Wolczko did not disclose using the compiler to -maintaining symbolic entries for externally referenced symbols; -

maintaining a mapping from locations in the generated code that reference external symbols to the symbolic entry for that symbol and the virtual machine, before the code is executed, performs the steps of -using the mapping and symbolic entries created by the compiler to generate direct references in the generated code to the externally referenced symbols that have been resolved by the virtual machine; -performing the default action on those external symbols that have not been resolved.

However, Gee disclosed an “improved method for resolving symbolic references in code generated by compiling source code” (Abstract, lines 5-7.) Gee disclosed (col. 22, lines 35 – col. 23, line 38, “When objects are created by the compiler, references are symbolic (by name) and are identified by entries in the aforementioned constant pool array... Upon first access to the object, the instruction execution procedure will examine the field_type and, upon determining that the field reference is unresolved, immediately perform the symbolic to logical addressing resolution function (default action)... to create resolved access information to be stored with the object(mapping)... Subsequent accesses to the object will examine the field_type value and determine that the references to the object have been resolved... The resolved access_flags field contains access control information that is associated with the object to implement security functions... In future invocations of the method, the index within the instruction stream will point to the method block pointer, which will then point to the method’s method block (generate direct references). In this manner, a symbolic address only needs to be resolved upon the first invocation of a method.

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to have modified Wolczko’s invention disclosing statically compiled code to

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include features as disclosed by Gee, using mapping and symbolic entries to generate direct references because "load immediate" instructions are superior, quicker processes.

Response to Arguments

9. Applicant's arguments with respect to claim 06/11/2003 have been considered but are moot in view of the cancellation of claims 1-30 and new ground(s) of rejection for claims 31-34.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

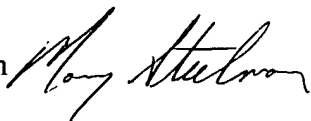
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Steelman, whose telephone number is (703) 305-4564. The examiner can normally be reached Monday through Thursday, from 7:00 A.M. to 5:30 P.M. If

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attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam can be reached on (703) 305-4552.

The fax phone numbers are (703) 746-7240 for regular communications and (703) 746-7239 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Mary Steelman



07/24/2003



TUAN Q. DAM
PRIMARY EXAMINER